

Second Amendment under PCT Article 34
filed on May 22, 2006

Cancel claims 1-15

16 (Amendment).

A color image sensor unit having a light source for illuminating an original, the light source including light emitting elements of at least three different colors; a sensor array including at least three pixel arrays, each of which has a color filter of a different color from each other and is arranged in the direction substantially perpendicular to a feeding direction of the original; and a light source drive circuit for independently turning on and off each of the light emitting elements,

characterized in that the light source drive circuit controls lighting start time and lighting period of each of the light emitting element in accordance with pixel arrangement positions of each of the three pixel arrays and with the feeding speed of the original.

17. The color image sensor unit according to claim 16, characterized in that the light source drive circuit sets

a lighting start sequence of the respective light emitting elements to a color sequence of the color filters, which color sequence corresponds to the pixel arrays in the feeding direction of the original, within a reading time per one main scanning line for reading the original.

18. The color image sensor unit according to claim 16 or 17, characterized in that among the light emitting elements of the three different colors, a half-value width of spectral spectrum of the wavelength of the light emitting element of at least one color is narrower than a half-value width of spectral spectrum of the color filter of the same color.

19. The color image sensor unit according to claim 16 or 17, characterized in that the light emitting element is an LED.

20 (Amendment).

An original reading apparatus comprising:

a color image sensor unit having an original scanning section for scanning an original; a light source section including light emitting elements of at least

three different colors, for irradiating the original; a sensor array section including at least three pixel arrays, each of which has a color filter of a different color, and which are arranged in the direction substantially perpendicular to the feeding direction of the original; and a light source driving circuit section for independently turning on and off the light emitting elements; and

an image forming section for forming an output image on the basis of image signals from said color image sensor unit,

characterized in that the light source driving circuit section controls lighting start times and lighting periods of each of the light emitting elements, in accordance with arrangement positions of the respective pixel arrays and feeding speed of the original by the original scanning section in the feeding direction of the original.

21. The original reading apparatus according to claim 20, characterized in that the light source driving circuit section sets a lighting start sequence of the respective light emitting elements to a sequence of the color filters which corresponds to the colors of the

pixel arrays in the feeding direction of the original, within a time period of reading per one main scanning line by the sensor array.

22 (Amendment).

The original reading apparatus according to claim 20, characterized in that the light source driving circuit section sets a difference between lighting start times of the respective light emitting elements to a time period represented by $1/3$ of a time period of reading per one main scanning line by the sensor array, within the time period of reading per one main scanning line.

23 (Amendment).

A driving method of an original reading apparatus comprising a color image sensor unit having an original scanning section for scanning an original; a light source section including light emitting elements of at least three different colors, for irradiating the original; a sensor array section including at least three pixel arrays, each of which has a color filter of a different color, and which are arranged in the direction substantially perpendicular to the feeding direction of the original; and a light source driving circuit section

which independently turns on and off the light emitting elements; and an image forming section for forming an output image on the basis of image signals from the color image sensor unit,

characterized in that a lighting start time and lighting period of each of the light emitting elements is controlled in accordance with arrangement positions of the respective pixel arrays and feeding speed of the original in the feeding direction of the original.

24 (Amendment).

The driving method of the original reading apparatus according to claim 23, characterized in that a lighting start sequence of each of the light emitting elements is set to a color sequence of the color filters corresponding to the pixel arrays in the feeding direction of the original, within a time period of reading per one main scanning line by the sensor array.

25 (Amendment).

The driving method of the original reading apparatus according to claim 23, characterized in that a difference between a lighting start time of each of the light emitting elements is set to a time period

represented by $1/3$ of a time period of reading per one main scanning line by the sensor array, within the time period of reading per one main scanning line.

26. The driving method of the original reading apparatus according to claim 23, characterized by further comprising a step of adjusting output balance of the color image sensor unit, by changing the lighting periods of respective light emitting elements by the light source driving circuit section, in accordance with the resolution of the original reading apparatus and/or the scanning speed of the original.

27 (Amendment).

A driving method of an original reading apparatus comprising a color image sensor unit having an original scanning section which scans an original; a light source section including light emitting elements of at least three different colors, for irradiating the original; a sensor array section including at least three pixel arrays, each of which has a color filter of a different color, and which are arranged in the direction substantially perpendicular to a feeding direction of the original; and a light source driving circuit section

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which independently turns on and off the light emitting elements; and an image forming section which forms an output image on the basis of image signals from the color image sensor unit,

characterized in that in a lighting period of the respective light emitting elements, TW is divided into plural block periods, wherein the TW is a time period of reading per one scanning line by the original reading section, and the emitted light quantity is changed by changing a lighting duty within each of the block periods.